## AMENDMENTS TO THE CLAIMS

The following listing of claims will replace all prior versions, and listings, of claims in this application.

1. (Currently Amended) A class-D power amplifier comprising:

a summing circuit, which outputs an error signal by summing an input signal with one of a first negative feedback signal and a second negative feedback signal;

an integral control circuit, which outputs an integral signal by integrating the error signal;

a feedback control circuit, which generates and outputs a switching control signal whose logic state changes according to the logic state of an abnormal state detecting signal generated in response to a monitoring signal;

a switching circuit, which switches the integral signal to one of a sub-loop and a steady-state loop in response to the switching control signal;

a sub-negative feedback circuit, which receives and processes the integral signal and generates and outputs a sub-negative feedback signal as the first negative feedback signal;

a controlled circuit, which receives and modulates the integral signal into a pulse width modulation (PWM) signal and generates an output signal, wherein the monitoring signal is the output signal or a modulated version of the output signal; and

a steady-state negative feedback circuit, which receives and processes the output signal from the controlled circuit and generates and outputs a steady-state negative feedback signal as the second negative feedback signal.

2. (Original) The class-D power amplifier of claim 1, wherein the controlled circuit comprises:

a PWM circuit, which modulates the integral signal output to the steady-state loop into the PWM signal using a sawtooth wave signal and outputs a PWM signal;

a switching amplification circuit, which outputs an amplified signal using switching according to the PWM signal; and

a low-pass filter (LPF) circuit, which receives the amplified signal and outputs a low-pass filtered signal generated by performing low-pass filtering on the amplified signal.

3. (Original) The class-D power amplifier of claim 1, wherein the feedback control circuit comprises:

a sawtooth wave signal generator, which generates and outputs a sawtooth wave signal;

a slope detector, which generates and outputs a signal representing the slope of the sawtooth wave signal, where the logic state of the signal representing the slope of the sawtooth wave signal changes according the slope of the sawtooth wave signal;

an abnormal state detector, which, in response to the monitoring signal, generates and outputs the abnormal state detection signal that has different logic states when the monitoring signal is greater than an upper threshold and less than a lower threshold; and

a feedback decider, which generates the switching control signal whose logic state changes according to the logic state of the abnormal state detection signal and outputs the switching control signal.

4. (Original) The class-D power amplifier of claim 3, wherein when the output of the integral signal is switched from the sub-loop to the steady-state loop, the logic state of the switching control signal changes in synchronization with the signal representing the slope of the sawtooth wave signal.

5. (Original) The class-D power amplifier of claim 3, wherein the monitoring signal is greater than the upper threshold in the abnormal state.

6. (Original) The class-D power amplifier of claim 5, wherein the sub-negative feedback signal generated in the abnormal state prevents the integral signal from becoming saturated.

7. (Original) The class-D power amplifier of claim 1, wherein the PWM signal maintains a pulse width that is half the pulse width of the PWM signal in a steady-state when the input signal is a fog signal, after the logic state of the switching control signal changes according to switching the integral signal from the sub-loop to the steady-state loop.

8. (Original) The class-D power amplifier of claim 7, wherein the pulse width of the PWM signal is the same pulse width as the pulse width of the switching control signal when the integral signal is switched from the sub-loop to the steady-state loop.

9. (Currently Amended) An amplification method of a class-D power amplifier comprising;

(a) outputting an error signal by summing an input signal with one of a first negative feedback signal and a second negative feedback signal;

(b) outputting an integral signal by integrating the error signal;

(c) generating and outputting a switching control signal whose logic state changes according to the logic state of an abnormal state detection signal generated in response to a monitoring signal;

(d) switching the integral signal to one of a sub-loop and a steady-state loop in response to the logic state of the switching control signal;

(e) receiving and processing the integral signal and generating and outputting a sub-negative feedback signal as the first negative feedback signal;

(f) receiving and modulating the integral signal into a pulse width modulation (PWM) signal and outputting an output signal, wherein the monitoring signal is the output signal or a modulated version of the output signal; and

(g) processing the output signal and generating and outputting a steady-state negative feedback signal as the second negative feedback signal.

10. (Original) The amplification method of claim 9, wherein step (f) comprises:

modulating the integral signal output to the steady-state loop into the PWM signal using a sawtooth wave signal and outputting the PWM signal;

outputting an amplified signal according to the PWM signal; and

outputting the output signal generated by performing low-pass filtering on the amplified signal.

11. (Original) The amplification method of claim 9, wherein step (c) comprises:

generating and outputting a sawtooth wave signal;

generating and outputting a signal representing the slope of the sawtooth wave signal, where the logic state of the signal representing the sawtooth wave signal changes according to the slope of the sawtooth wave signal;

in response to the monitoring signal, generating and outputting the abnormal state detection signal that has different logic states when the monitoring signal is greater than an upper threshold and less than a lower threshold; and

generating the switching control signal whose logic state changes according to the logic state of the abnormal state detection signal and outputting the switching control signal.

12. (Original) The amplification method of claim 11, wherein when the output of the integral signal is switched from the sub-loop to the steady-state loop, the logic state of the switching control signal changes in synchronization with the sawtooth wave slope representing signal.

13. (Original) The amplification method of claim 11, wherein the monitoring signal is greater than the upper threshold in the abnormal state.

14. (Original) The amplification method of claim 13, wherein the sub-negative feedback signal generated in the abnormal state prevents the integral signal from becoming saturated.

15. (Original) The amplification method of claim 9, wherein the PWM signal maintains a pulse width that is half the pulse width of the PWM signal in the steady-state when the input signal is a fog signal, after the logic state of the switching control signal changes when the integral signal is switched from the sub-loop to the steady-state loop.

16. (Original) The amplification method of claim 15, wherein the pulse width of the PWM signal is the same pulse width as the pulse width of the switching control signal when the integral signal is switched from the sub-loop to the steady-state loop.

17. (Previously Presented) A class-D amplifier for generating an unsaturated integral signal, comprising:

a feedback controller for generating a control signal and outputting the control signal, the feedback controller comprising: a sawtooth wave signal generator for generating a sawtooth wave signal; a slope detector for generating a signal representing the slope of the sawtooth wave signal; an abnormal state detector for generating an abnormal state detection signal in response to a monitoring signal; and a feedback decider for generating the control signal in response to the abnormal state detection signal;

a switching circuit for receiving an integral signal and the control signal and outputting the integral signal to one of a sub-loop and a steady-state loop;

a sub-loop for receiving the integral signal and generating and outputting a first negative feedback signal;

a controlled circuit for receiving the integral signal, modulating the integral signal into an output signal, amplifying the output signal, filtering the output signal, and outputting the output signal; and

a steady-state loop for receiving the output signal and generating and outputting a second negative feedback signal;

wherein the integral signal is unsaturated due to the first and second negative feedback signals.

18. (Previously Presented) The class-D amplifier of claim 17, further comprising:

a summing circuit for summing an input signal with one of the first and second negative feedback signals and outputting an error signal based on the summation.

19. (Previously Presented) The class-D amplifier of claim 18, further comprising:

an integral control circuit for integrating the error signal and outputting the integral signal.